Megha Pandya

- **Field of research:**
  Solar sources and interplanetary drivers of space weather events and their geoeffectiveness

- **Name of institute:**
  Indian Institute of Geomagnetism (IIG) Mumbai

- **Pursuing degree:**
  PhD (Doctor of Philosophy)

- **Completed degree (in descending order):**
  Master of Science MSc. (Physics)
  Bachelor of Science BSc. (Physics, Chemistry and Mathematics)

- **Trainings Taken (in descending order):**
  -

- **Publications (in descending order):**
  -

- **Oral presentation (in descending order):**
  -

- **Poster presentations (in descending order):**
  ***Megha Pandya**, R Selvakumaran, Sandeep Kumar, B. Veenadhari, Investigation of Major Solar Eruptions of Solar Cycle 23 & 24 and their geoeffectiveness. Science of Space Weather (SSW) Goa-2016, India*

- **Schools/Workshops Attended (in descending order):**
  ***School:** Science for Space Weather Goa, India, January 24 - 29, 2016*

Purpose of study in the research field (in 1000 words):

The fiery Sun goes through some markedly different cycles and causes change in the geospace environment. The dynamic and variable conditions in the geospace including the Sun, the interplanetary medium and in the ionosphere-magnetosphere system up to the ground is affected by the activities on the Sun. CMEs and flares originate from closed magnetic field regions on the Sun. They are responsible for large solar energetic particle events, geomagnetic storms and in controlling the space weather. Space weather is greatly influenced by the speed and density of the CME driven solar wind and the interplanetary magnetic field. The severe space weather can cause extensive huge disruptions in the modern technology and society. It is therefore important to understand what determines the severity of space weather. Many simulations are developed to show the storm time mechanisms but still some unknown findings will be there. Geomagnetic storm is the major dynamic event that affects human life and technology in space and ground both. The prime factor that determines the intensity of the geomagnetic storm depends on the product of the solar wind speed and the value of Bz, which intensify the ring current when the time duration Bz remains negative. The major aims and objectives of my work is to make the comparative study of solar sources of the moderate and intense geomagnetic storms during solar cycle 23 and 24. Using high resolution ground magnetic data and satellite data, during solar cycle 23 and 24, will give better understanding of complex magnetic storm behaviour. Geomagnetic storms are the result of the enhancement of energy density (ED) in the inner magnetosphere. Energy densities in the ring current region could be statistically investigated by compiling data using geomagnetic storm phases and Dst levels. These observed energy densities can be further validated by the pre-existing models.

Other details:

- **Awards & Honour (i.e.NET/SLET/JEST/GATE/any equivalent)**
  PET (PhD Entrance Test)

- **Any other examinations (i.e. IELTS/TOFEL/ any equivalent)**
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- **Computer Operating and/or Programming Skill:**
  MATLAB, FORTRAN

- **Language Skill**
  English, Hindi, Gujarati

- **Permanent communication address:**
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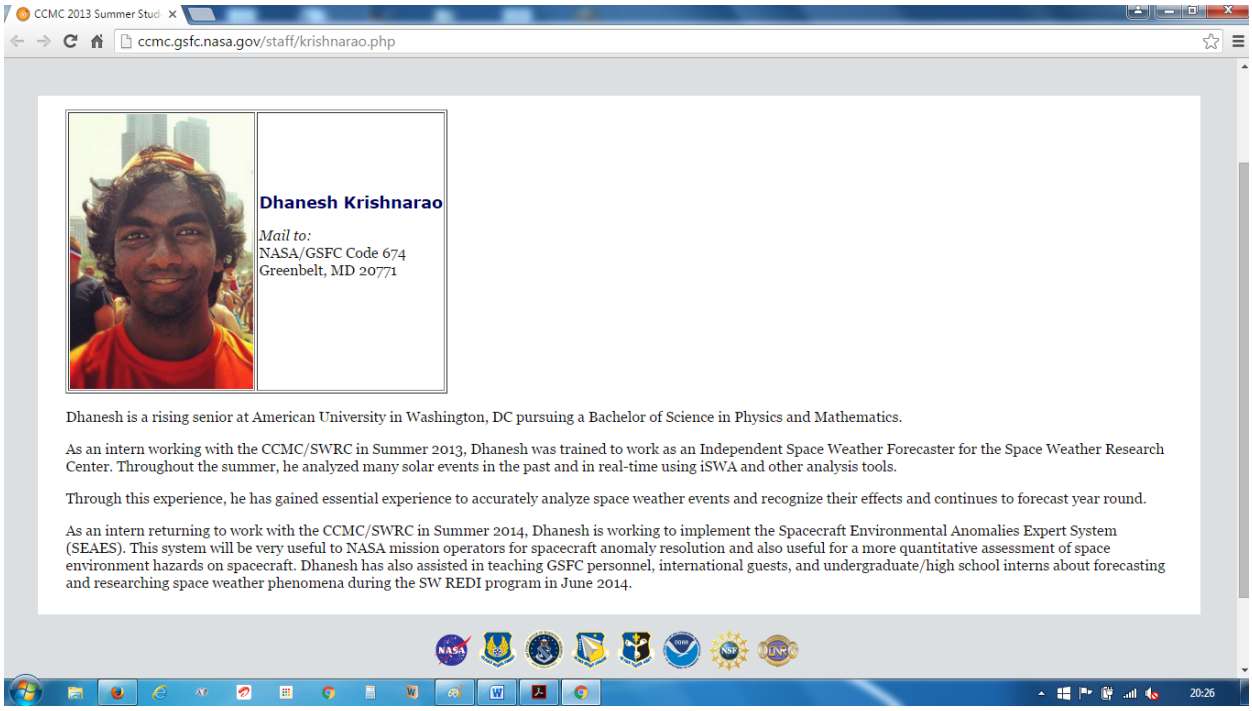

Megha Pandya is a PhD student in Indian Institute of Geomagnetism (IIG), Navi Mumbai, India.

As a participant in space for weather workshop in Goa, India, she has learned about the on-going research in the field of space weather and the solar heliospheric studies. From the school, which was organized in conjugation with workshop, she learned about the CCMC modelling through hands-on training and live demo sessions from the modelling experts, engineers and scientists. The CCMC models are directly related to her Ph.D research work where-in she could directly make observations and the analysis out of it.

As a part of her research work along with the satellite data like SOHO, ACE, WIND, Geotail etc. she would also like to implement the mathematical tools like wavelet analysis, correlation functions and the super epoch analysis for my research work. The results obtained from the satellite data can be validated using this mathematical tools and existing models like CCMC.